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Encoder Instructions

M385

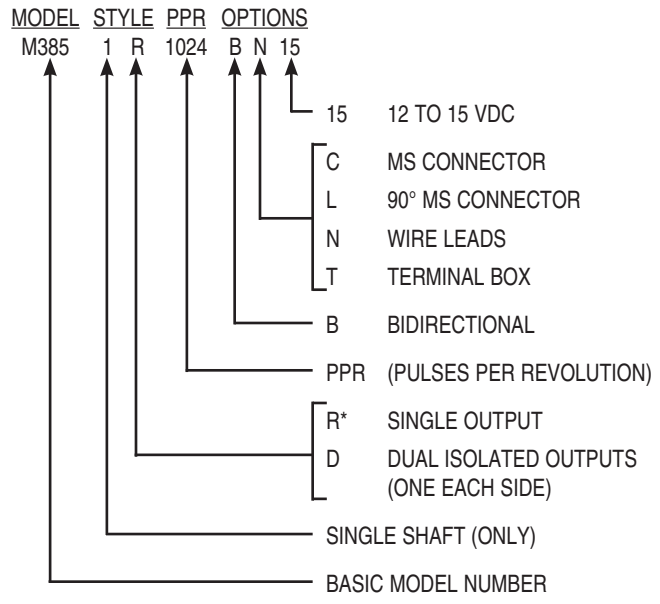
INACTIVE DESIGN
Replaced by Model **AV485**

DESCRIPTION

The Avtron Model M385 Pulse Generator is a NEMA 56C face mounted, zero-speed incremental rotary transducer, designed for industrial environments. When mounted to a machine shaft, it provides a specific number of electrical pulses per revolution that are proportional to the shaft's rotation. The photoelectric sensing system and electronics are protected by an O-ring sealed, cast aluminum housing. Special installation procedures allow operation in particularly dirty environments.

The M385's second output option is electrically independent and totally isolated. For many applications, this feature provides a running spare output by simply interchanging the military quality output connectors.

The available options for the M385, and how they are indicated in the M385 part number, are shown below:



R*: RIGHT SIDE AS VIEWED FROM ANTI-DRIVE END

INSTALLATION

The M385 is designed to face mount to a NEMA 56C accessory flange. A flexible, zero-backlash coupling should be used to connect to the ⅝" steel shaft. Do not subject the generator's shaft to axial thrust. The coupling must have the ability to absorb any shaft endplay.

CAUTION

Do not force or drive the coupling onto the shaft, or damage to the bearings may result. The coupling should slide easily on the shaft. Tighten the generator mounting hardware prior to locking the coupling on the shaft.

On installations where frequent large temperature swings occur, and especially where moisture is a problem, special venting of the housing should be considered. Consult the factory for specific details.

CAUTION

The M385 is often used for speed feedback in drive systems, where any failure can cause a machine shutdown. While the M385 is designed for continuous mill operation, it is important to follow proper procedures with this unit.

REPAIR of defective units requires returning the unit to the factory, where there is special test equipment. Turnaround time is minimal, and charges are nominal for out-of-warranty units.

DO NOT install M385 (or any other rotating equipment) where liquids will be sprayed or hosed onto them. If necessary, provide a shield.

DO NOT connect oscilloscope or any instrument common to any pulse generator connection other than common.

WIRING CONSIDERATIONS

For bidirectional operation of the pulse generator, proper phasing of the two output channels is important. Phase A channel leads phase B channel for clockwise rotation as viewed from the end-cap (anti-drive) end of the generator.

Interconnecting cables specified in the wiring diagrams are based on typical applications. Refer to the system drawing for specific cable requirements where applicable.

Physical properties of cable such as abrasion, temperature, tensile strength, solvents, etc., are dictated by the specific application. General electrical requirements are: stranded copper, 22 through 16 gauge, braid or foil with drain wire, 0.05 µF maximum total mutual or direct capacitance, outer sheath insulator, 1,000 ft. maximum.

ENVIRONMENTAL CONSIDERATIONS

Special attention is to be given to conduit runs, interconnection wiring and NEMA type enclosure mounting. In those applications where ambient temperatures are controlled within 40°F and high humidity/washdown are not present, position the flexible conduit with a slight sag to prevent any condensation from entering the pulse generator via the conduit.

In harsh environments, which include temperature extremes, high humidity, equipment washdown or atmospheric contamination, extra care is required for interconnection. Follow these steps to reduce potential problems:

1. Always mount connection points, conduit couplings, junctions boxes, etc., lower than actual generator.

2. Venting of generator is beneficial. One method is to take conduit run outside of hostile area where practical.

3. For washdown areas, shroud or otherwise cover the pulse generator to prevent direct water spray. Do not attach the shroud directly to the generator.

4. Keep conduit outputs and axis of rotation horizontal.

5. Purging of pulse generator should be reviewed with Avtron.

M385 SPECIFICATIONS

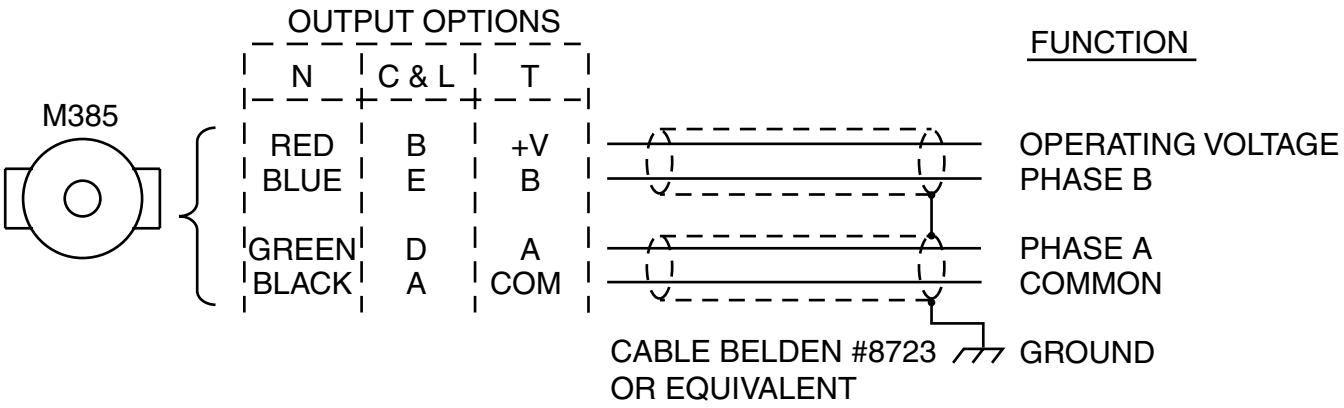
	+15 V OPERATING VOLTAGE
OPERATING POWER	+12 TO +15 VDC ±10%, 55mA (N.L.), 125mA Max.
OUTPUT SIGNAL	Two channels (A,B), in quadrature (two phase, bidirectional) with complements $\overline{A}$,$\overline{B}$
PULSES PER REVOLUTION	240, 360, 600, 1024, 1200, 2048, 2500 standard. Other PPR's available
WAVE SHAPE	Square Wave
PHASE A TO PHASE B TRANSITION SEPARATION	15% Minimum
VOLTAGE OUTPUT	High: Supply Voltage minus 1.6 Volt; -30 mA source Low: 0.5 Volt Max.; 16mA Sink
FREQUENCY	75 KHz Maximum
MECHANICAL	
SPEED RANGE	0 to 3600 RPM (Continuous)
STARTING TORQUE	2.2 Oz-In. (Typical)
SHAFT INERTIA.	0.1 Oz-In.^{2}
ACCELERATION	5,000 RPM/Sec.
COUPLING RECOMMENDED	Zero Backlash, Thomas Miniature Flexible or equivalent. Where axial endplay exceeds ±0.020", use Thomas CCX or equivalent
OPERATING TEMPERATURE	0 to 140°F
WEIGHT	9 lbs.

NOTE: AVTRON STANDARD WARRANTY APPLIES. COPIES AVAILABLE UPON REQUEST.

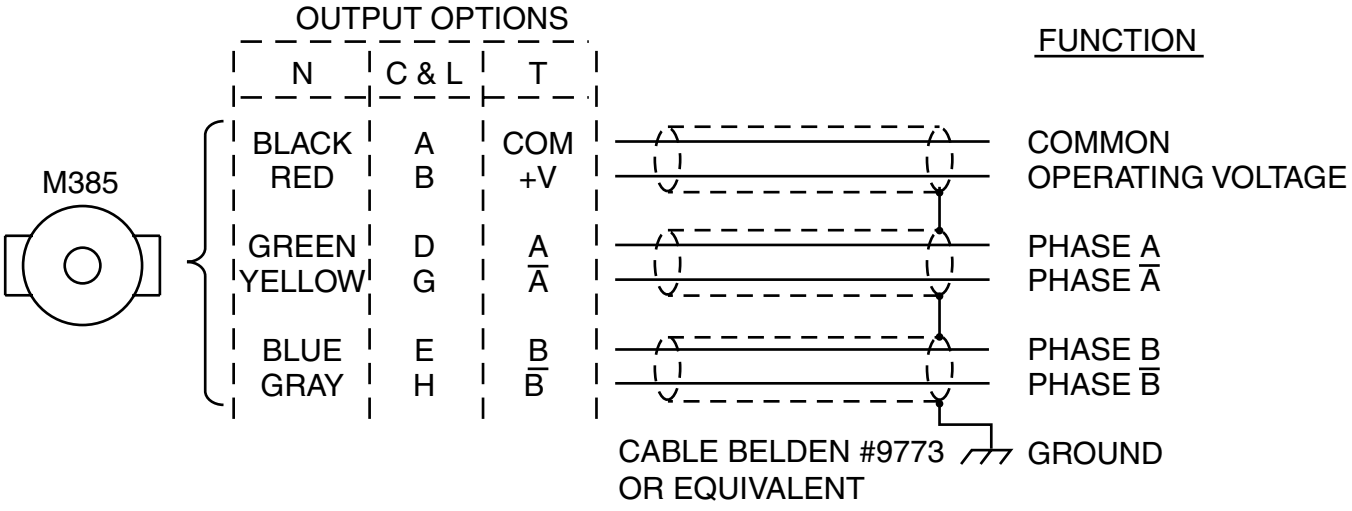
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

WIRING DIAGRAM

FOR SINGLE ENDED APPLICATIONS

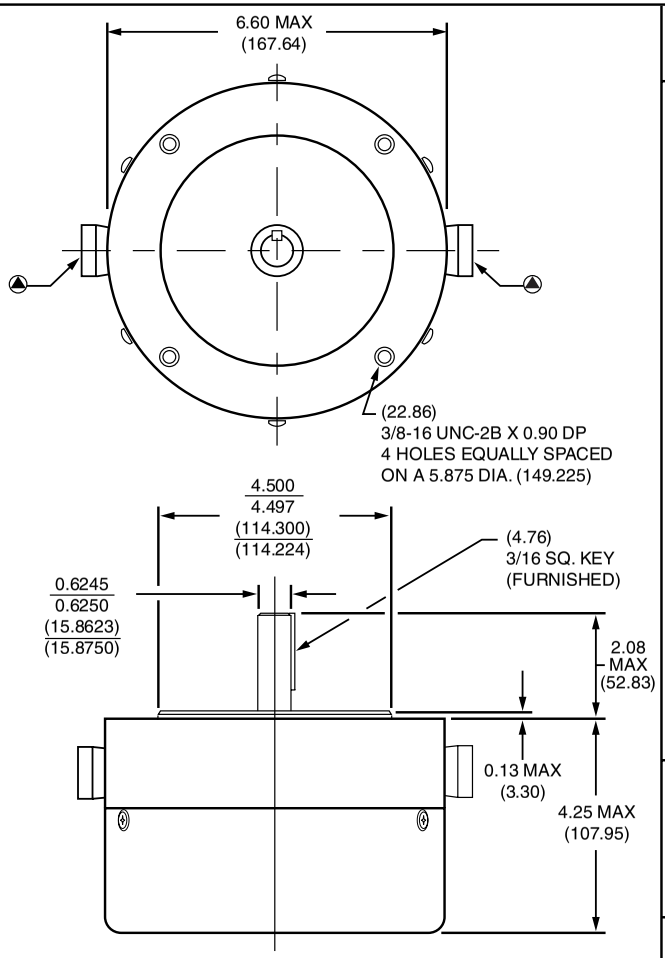


FOR DIFFERENTIAL APPLICATIONS



NOTE: 5' FLEXIBLE CONDUIT STANDARD FOR ALL OUTPUT OPTIONS EXCEPT OPTION L.

M385WDMAC

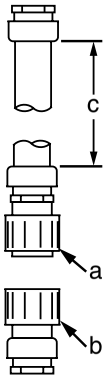


M385OPMAC

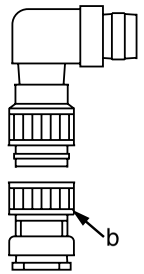
▲ OPTION INSTALLATION LOCATION

OPTION DETAILS

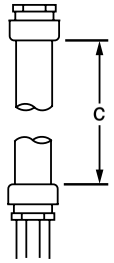
"C"
MS STYLE
CONNECTIONS



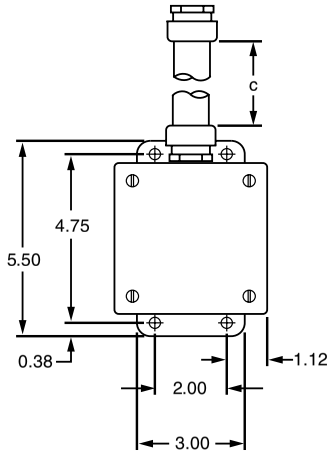
"L"
90˚ ELBOW
MS STYLE
CONNECTIONS

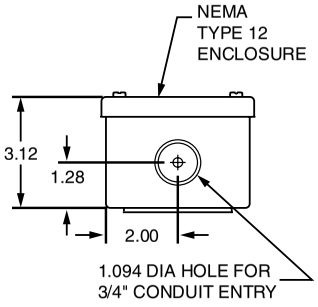


"N"
WIRE LEADS
FOR
CUSTOMERS
SUPPLIED
JUNCTION BOX



"T"
INTERNAL TERMINAL
STRIP PREWIRED
ON GENERATOR SIDE





a- MS3101F18-1P
b- MS3106F18-1S
c-5ft. OF 1/2" FLEXIBLE METAL CONDUIT

FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

ALL DIMENSIONS ARE IN INCHES
WITH METRIC EQUIVALENTS IN PARENTHESIS

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